PROGRESS

OF

MEDICAL SCIENCE.

THERAPEUTICS.

UNDER THE CHARGE OF

REYNOLD W. WILCOX, M.A., M.D., LL.D.,
PROFESSOR OF CLINICAL MEDICINE AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; ASSISTANT VISITING PHYSICIAN TO BELLEVUE HOSPITAL.

RESORCIN IN CHRONIC GASTRITIS.

DR. W. H. THOMPSON makes a very careful report of the results of the use of this remedy in seventy-eight patients selected from his private practice. Of these cases, the failures numbered twenty-one; the successes were fifty-one, and he was doubtful concerning the remaining six. On reviewing his failures, they seemed to present one general characteristic in common, namely, that the gastric disturbance was in them consecutive to nervous disorder. In all histories with such a sequence, resorcin did not seem to have any effect one way or the other. Of the doubtful cases, four proved to be cases of stomach disorder dependent upon gall-stones. It is probable that so long as hepatic irritation continues, the subacute gastritis will continue, whatever be the treatment. Another case, that of a young married lady, with dyspepsia and causeless mental depression, often reported marked improvement and then the reverse. The last of the doubtful cases was that of a gentleman who finally developed ataxic symptoms. Of the successful cases, seventeen presented symptoms of gastric ulceration, the remainder showing only symptoms of gastritis. In cases of severe megrim the remedy had no effect in relieving the attacks themselves, but it had an undoubted effect, fully appreciated by the patients, of preventing the attacks. The element of intermittency which so fundamentally separates functional nervous disease from organic nervous disease, points strongly to a toxic origin, or to auto-infection, as the main factor in functional neuroses; the observation of the benefit of an antiseptic like resorcin tending to support this view. Resorcin, which is now chiefly obtained from benzol, is readily soluble in water, alcohol, ether, and oils, but not in chloroform. It is not irritating to the stomach, and is never "tasted" again by eructation. Except when combined with strong tinctures—then doubtless from the intolerance of alcohol which goes with gastritis of any form—it does not "repeat" by having its taste returned from the stomach. It should be given in solution, as the powder is locally irritant, in an average dose of five grains one hour after meals. A dose of ten grains often causes dizziness.—*Merck's Bulletin*, 1893, No. 1, p. 8.

PAPOID DIGESTION.

DR. R. H. CHITTENDEN has made a thorough study of this interesting substance, and believes that from his experiments the following conclusions may be drawn:

1. That papoid is a true, soluble, digestive ferment or mixture of ferments, of vegetable origin. 2. That it has marked proteolytic action in acid, alkaline, and neutral solutions and in the presence of many chemicals, antiseptics, and therapeutic agents. 3. That it has a peculiar softening and disintegrating action on proteids, and that its general proteolytic action is that of a genuine digestive ferment, similar to the ferments of animal origin. 4. That it has a certain amount of amylolytic or starch-dissolving power. 5. That it has a marked rennet-like action upon milk, and a pronounced digestive action upon milk-casein. 6. That it exerts its peculiar digestive power at a wide range of temperatures. 7. That the ordinary conditions of health and disease in the stomach and intestine are not liable to check its action, while certain possible conditions may accelerate it.—*Transactions of the Connecticut Academy of Arts and Sciences*, 1892, vol. ix.

THE TREATMENT OF CARDIAC DROPSY.

DR. R. LÉPINE regards the removal of an intercurrent pleuritic effusion as presenting obvious advantages, simple tapping being often sufficient to bring about an improvement in the cardiac condition. For the œdema of the feet and lower limbs, Southey's tubes are satisfactory, being kept in place by collodion or strips of plaster, the part being dusted with iodoform and covered with a bandage. Venesection, even, may be advisable. Digitalin in solution in alcohol, and in fairly large doses, produces beneficial effects. Although he has used caffeine in large doses for some years with good results—very marked in some cases—it was not until he made use of it by subcutaneous injection that he obtained the best results. In order to produce free diuresis it must exert its action suddenly and rapidly. By this method a larger dose can be introduced into the circulation, and it is more rapidly eliminated.—*The Medical Week*, 1893, No. 7, p. 73.

PIPERAZINE IN THE TREATMENT OF STONE IN THE KIDNEY.

DR. DAVID D. STEWART reports three cases in his usually careful manner. The urate of piperazine, which is said to be a neutral salt, is seven times more soluble than is the corresponding salt of lithium. Despite the affinity of this remedy for uric acid, and the extreme solubility of its urate, little can be expected from it in uratic chronic multiple arthritic enlargements, at least in the doses generally administered—fifteen grains daily. In much larger amounts, such as a drachm or two daily, exhibited over a continuous time, more promising results may be anticipated; whether, however, such doses will be tolerated without injury, is yet to be determined. The present unfortunately high price of the drug prevents the determination of the question. In the first case, gravel, which had been a persistent and troublesome symptom for months, permanently disappeared. The second case, which was one of undoubted pyelitis, the pus has almost entirely disappeared from the urine, being only ascertained by microscopic examination. In the third case, that of probable mulberry calculus, no benefit has been obtained—which fact is in accordance with what might be anticipated from the behavior of this remedy with this salt of calcium, upon which it has no solvent action. The precise mode of action of piperazine is still obscure, although it is certain that it is beneficial in cases of gravel and stone.—*The Therapeutic Gazette*, 1893, No. 1, p. 19.

THE RELATIVE VALUE OF THE SEVERAL SUBSTANCES RECOMMENDED AS ANTIDOTES TO PHOSPHORUS.

DR. E. Q. THORNTON, from his experiments in the laboratory, concludes that permanganate of potassium is the best antidote. It must be used before the poison has become absorbed, and must be well diluted (one-half to one per cent. solution), or vomiting will result before the chemical reaction has taken place in the stomach. It must be given in excess, as considerable permanganate is reduced by the organic substances in the stomach. While sulphate of copper and phosphorus are chemically incompatible, and reaction occurs instantly when they are brought into contact, they decidedly complicate a case of phosphorus-poisoning by causing severe gastro-enteritis. Any substance intended to act as a chemical antidote in the stomach must be given in excess, so that it may come in contact with all the poisonous material; but with sulphate of copper, whether given in excess or in the same chemical proportions required to make the change, violent gastro-intestinal inflammation results. In all cases of phosphorus-poisoning in which sulphate of copper was used as an antidote, death resulted; although the animal to which sulphate of copper alone was given, recovered, decided gastro-enteritis resulted. The animal to which the solution of peroxide of hydrogen was administered, recovered after poisoning by phosphorus. Unchanged phosphorus was vomited and passed by the bowels by this animal, and severe gastro-enteritis resulted. Peroxide of hydrogen is too slow in oxidizing the phosphorus, and too irritating upon the digestive tract to be a valuable antidote. Old French oil of turpentine, which is acid in reaction, is said to form with phosphorus a crystalline, spermaceti-like wax, which has been called "turpentine phosphoric acid." The ordinary oil of turpentine does not bring about this change, and inasmuch as the old French oil of turpentine cannot be obtained in this market, it should cease to be considered as a practical antidote.—*The Therapeutic Gazette*, 1893, No. 1, p. 8.

CANTHARIDES IN THE TREATMENT OF CHRONIC NEPHRITIS.

DR. H. HUCHARD, quoting Lancereaux, believes that this remedy affects directly the epithelial lesion of the kidney, and should be considered as a valuable remedy in the treatment of chronic nephritis. He has not used it in the acute phase of nephritis, regarding the disappearance of the febrile condition and the onset of œdema, anasarca, and the dropsies to indicate the time for the commencement of the use of this remedy. He employs the tincture in daily doses of from six to twelve drops, believing that those of thirty, fifty, and even sixty drops, are certainly too large. It is best exhibited in emulsion. Two cases are reported in illustration of his belief in the value of this remedy. It is not necessary to multiply observations before rejecting, *a priori*, a remedy whose excellent effects have been demonstrated by reliable clinicians.—*Revue gén. de Clinique et de Thérapeutique*, 1893, No. 5, p. 68.

CHLORALOSE.

MM. M. HANRIOT and CH. RICHET have studied the physiological action of this new remedy. This substance is the result of the action of chloral anhydride upon glycose; it is crystallizable, soluble in boiling water, and on cooling deposits crystals. It can be administered, sufficiently diluted, in milk. It is very bitter and disagreeable, and leaves a nauseous after-taste if given in an aqueous solution. If administered to dogs it produces somnolence, a noticeable reflex and psychical excitability, but without slowing the respiration or heart, which retains its force, and when the sleep is profound the reflexes are all preserved. Their motor power is not lost, although they do not react to excitations, which, in a normal animal, are painful. Observations upon man show that this substance is a certain hypnotic. It can be exhibited in wafers, in dose from six to ten grains; and, in one instance, twenty-two grains produced no other effect than a prolonged sleep. The average dose is between six and seven grains, but it is better to commence with a smaller one.

M. L. LANDOUZY has used this drug during the past eight months as a soporific, always on patients without fever, without appreciable organic visceral lesions, neurasthenics of different degrees, with whom remedies of this class, even in large doses, have failed. In eleven cases, of thirteen, sleep resulted, generally of several hours' duration, restful, calm, and of agreeable awakening; sometimes it is followed by an unpleasant awakening, heaviness of the head, headache, vertigo, emptiness of the head, inappetence, slight malaise, which has persisted an hour after awakening. With two patients these symptoms were more serious, and accompanied by a desire to vomit, coldness of the extremities, cardiac oppression, tendency to fainting, and palpitation. A single dose of five grains, given an hour and a half after eating, may be repeated at the expiration of two hours. He believes this remedy to be superior to chloral, and in smaller dose, the head symptoms have appeared to be less than with the latter drug.

M. P. MARIE records his observations in eleven cases of insomnia, claiming good results. In insomnia of alcoholic origin his successes were not equal to those from morphine, two cases only being cited.

M. R. MOUTARD-MARTIN states that the sleep is soon obtained, is light, and the awakening without the heaviness which is often experienced from chloral. There is no constipation, nor any unfavorable effect upon the stomach, and the appetite may even be increased. From a study of eight cases he concludes: 1. That it is an efficient hypnotic in doses of from five to ten grains.

2. That the preferable method of administration is in a cachet of six grains one hour before sleep is desired, and the second at the first moment of awakening. 3. That the sleep is a calm, dreamless one. 4. That a dose of six grains is followed by sleep within a half to one hour. 5. That the awakening is complete, and without heaviness of the head. 6. That after several days' successful use of this remedy, during from two to four days of intermission of it one observes a sleep not so good as with it, but better than before its administration.

M. CH. SÉGARD has experimented with this drug in six instances: neurasthenia, cardiac disease, arterio-sclerosis, cervico-brachial neuralgia, gout, and paralysis agitans, and concludes that, although it has no analgesic action, it is a reliable hypnotic, even in small doses.—*Comptes-rendus hebd. Société de Biologie*, 1893, No. 2, p. 1.

THE TREATMENT OF INTERMITTENT FEVER BY THE METHOD OF BOUDIN.

DR. DU CAZAL recognizes the fact that the treatment of this fever, by arsenic, is by no means novel, but the treatment of Boudin is not the treatment by arsenic, but by arsenic administered in a certain way. Arsenious acid is dissolved in water in the proportion of one to one thousand. Advantage is taken of the tolerance of arsenic at the outset and an amount of this solution is given, each day, equivalent to nearly one grain of arsenious acid, and this amount is continued daily until symptoms of intolerance appear—nausea, colic, sometimes even vomiting and a slight diarrhœa. The daily amount is so divided that it is taken in equal portions every quarter of an hour, from six or seven in the morning until seven or eight o'clock in the evening, in two or three spoonfuls of water or milk. The patient, also, must be well nourished. The writer would add a third requisite—that the administration of the remedy must be entrusted only to a person who will religiously follow the directions as to time and amount. At the end of from three to five days the symptoms of intolerance appear; then it is necessary to lengthen the interval between the doses, but not to suddenly stop the remedy. The interval of administration being doubled, again the symptoms of intolerance will appear at the end of forty-eight to seventy-two hours. Again the interval is doubled, and the remedy is continued for from eight to ten days. Relapses are not only rare, but even exceptional.—*Revue gén. de Clinique et de Thérap.*, 1893, No. 2, p. 17.

THE PHYSIOLOGICAL ACTION OF CHLOROFORM.

DRS. W. H. GASKELL and L. E. SHORE, on looking over the curves of the second Hyderabad Chloroform Commission, find that it is evident that this Commission did not supply any answer to the most important question connected with the action of chloroform, namely: What occurs when a large dose of chloroform is administered? The object of their investigation was to determine: 1. The primary effect of chloroform; and 2. The ultimate effect of a large dose on the vasomotor centre, and on the heart, respectively. They believe that the fall of blood-pressure caused by administration of chloroform is one primarily due to a weakening of the heart's action, and not to a paralysis of the vasomotor centre. On the contrary, the primary effect of blood containing chloroform vapor on the vasomotor centre is over-excitation, causing thereby a marked rise of blood-pressure, and it is only after an excessive dose has been given that there is any evidence of any paralysis of this centre. The general conclusions are that the dangers of chloroform administration are: 1. Of causing a serious fall of pressure, owing to weakening of the heart from too great a percentage of chloroform in the air, which, combined with the action of chloroform on the respiratory centre, in its turn causes failure of respiration; and 2. Cessation of respiration after long administration, owing to keeping on the chloroform, although given with plenty of air, too long a time after complete anæsthesia has been established.—*British Medical Journal*, 1893, Nos. 1673, p. 105; 1674, p. 164; 1675, p. 222.

Hämol and Hämogallol.

Dr. A. Grünfeld has made a careful study of these two new preparations of iron. Quoting Busch, who found the iron contained in the urine to be increased to 150 per cent., he believes that hämogallol is a remarkably valuable iron preparation for absorption. These remedies are best prescribed diluted with four parts of white sugar, of which the dose is a teaspoonful of the dry powder upon the tongue with a swallow of water afterward, or seven or eight grains in starch wafers, taken at meal times. The price has been reduced, so that at the present time these remedies are within the means of patients.—*Deutsche med. Wochenschrift*, 1893, No. 3, S. 70.

The Action of Chloroform and Ether upon the Vascular System.

Dr. John A. MacWilliam has performed some laboratory experiments upon cats (a known quantity of the anæsthetic being carried into the lungs by artificial respiration), and in the tracings shown the chief points to be noticed are: 1. The evidences of enfeeblement and dilatation manifested in the heart under the influence of chloroform, these changes frequently beginning even before the conjunctival reflex was abolished, and when the fall of blood-pressure was not greater, and often not so great, as during chloroform anæsthesia brought on in the usual way. The state of the blood-pressure and the conjunctival reflex controvert the idea that an excessive dose of chloroform was present in the circulation. It is especially to be borne in mind, also, that the chloroform was not given in too concentrated a form, but freely mixed with air to quite as great a degree as when the anæsthetic is given by inhalation in the ordinary way. The depressing changes in the heart are of the same nature as those which can be seen in the heart at a deeper stage of anæsthesia, and they are quite in harmony with what is seen when the chest is suddenly opened and the heart exposed in an animal brought deeply under the influence of chloroform in the usual way—by inhalation. Moreover, they accord with the evidence supplied by the sudden occurrence of death, clearly due to cardiac failure, and not remediable by means adapted to meet a failure in the respiration and in the peripheral resistance in the vascular system. While the force and tone of the heart are depressed by chloroform, there is no great change in the rhythm. The heart is beating rapidly in these experiments; the medullary cardiac inhibitory centre is paralyzed by the anæsthetic. 2. The contrast between the effects of ether and chloroform upon the heart when the respective anæsthetics are administered, freely diluted with air, in such an amount as to cause abolition of the conjunctival reflex. The conditions of experimentation were precisely the same in the two cases, when ether and when chloroform were given, except that the former anæsthetic was given much more freely than the latter. Under chloroform the blood-pressure falls, and there is a diminution in the force of the beats and the occurrence of marked dilatation of the auricle and ventricle. Under ether the blood-pressure became lowered, but the action of the heart showed no great change; the ventricular beat apparently increased somewhat in force; there was also a very brief, slight and unimportant phase of expansion [dilatation].—*The Journal of Physiology*, 1892, vol. xiii. p. 860.

THE TREATMENT OF CHLOROFORM COLLAPSE.

DR. B. W. RICHARDSON recommends, as important, artificial respiration accomplished by the double-acting bellows, inserting the exit tube into the nostril and emptying the lung, then gently inflate, and next empty and fill, in alternate stroke. Galvanism has been used (1) to excite and sustain respiration; (2) to excite and sustain the heart and respiration; (3) to excite the heart while the respiratory process was sustained by artificial respiration. Yet, as he cannot see how to use electrical excitation with advantage and on a known principle, he believes it to be unreasonable to recommend galvanic action as a means of resuscitation. Antidotal measures he believes to be hardly applicable to chloroform. Inversion of the body is most promising in collapse in the first stage, when syncopal apnœa is the mode of death. The injection of peroxide of hydrogen solutions into the peritoneal cavity, oxygen being liberated into the peritoneal sac, should result in a direct vivifying action of oxygen upon the diaphragm, and a direct absorption of oxygen into the blood, with revival of the contraction of the right auricle and ventricle. This, however, in experiments upon animals, failed, because the oxygen entered the venous system, changing venous blood into arterial, with separation of the oxygen in the free state in the form of bubbles, which would not pass through the capillaries of the lungs; death consequently took place in the same way as when air is injected into a vein.—*The Asclepiad*, 1892, No. 36, p. 337.

POISONING BY CHLOROFORM.

DR. A. B. MARFAN reports the case of a man, forty-nine years old, who drank about two ounces of chloroform. He experienced acute epigastric pain, and slept for twelve hours; then vomited almost clear blood. On attempting to take food, it was immediately vomited, mixed with blood. Five days after, he entered the Necker Hospital, when a most striking jaundiced color of skin and conjunctivæ was remarked. There was marked tympanites, enormous liver, slight enlargement of the spleen. The stools were colorless, but mixed with a small quantity of black blood. The heart-beats were feeble; pulse 68, small and soft; the temperature normal. The urine was albuminous and contained bile. An absolute milk diet was ordered, and bicarbonate of soda in large doses, with β-naphthol to combat the ulceration of the stomach, and to obtain gastro-intestinal antisepsis. After fourteen days he became convalescent, and recovered perfectly.—*Le Mercredi Médical*, 1892, No. 50, p. 593.

THE PROTECTIVE INOCULATION OF MEN AGAINST ASIATIC CHOLERA.

DR. G. KLEMPERER has reviewed the important work done in the way of the determination of the methods by which immunity against cholera can be obtained. The protective influence of subcutaneous injection of the cholera bacillus culture, of the blood-serum of immunized animals, of the milk of immunized animals, has received careful attention. Noting the possibilities of error when the results of researches upon animals are to be considered as applicable to man, he believes that it is probable that subcutaneous injection of cultures, increasing their virulence, can, in the person inoculated, develop a certain protective power of the blood-serum. In determining how great this protection must be—the quantitative estimation—the observations of Lazarus are in point, who, making use of the blood-serum of persons who had been cured of cholera, rendered guinea-pigs immune against intoxication with the comma bacilli. The quantity required varied from about one-sixth of a drop to seven drops, when used for guinea-pigs. The author has sought to render men immune (1) by subcutaneous injection of virulent cultures; (2) by introducing warmed cultures into the stomach; (3) by injection of the milk of immunized goats. The first method showed by experiment that the blood-serum of the subject had acquired anti-toxic properties to a marked degree, even more than that of the patients who had recovered from mild cholera, so that it is probable that the subject is protected against cholera infection. In the second method he showed that here, also, the anti-toxic properties of the blood-serum of the subject had distinctly increased; but the effect was less than in the use of the first method. In the third method, practised upon man, a drachm of the milk of an immunized goat injected resulted in such a degree of protection that four drops of his blood-serum rendered guinea-pigs proof against cholera.—*Berliner klin. Wochenschrift*, 1892, No. 50, S. 1265.

AGATHIN.

DR. ILBERG has employed this remedy in several cases, following the recommendation of Rosenbaum, that it was valuable in "neuritis and in rheumatic affections of muscles, joints, and tendons." The doses ranged from seven to fifteen grains, three times daily. After about twelve hours the urine became light-brown in color—seldom dark-green, similar to that from the absorption of carbolic acid—which persisted for twenty-four hours after the stopping of the remedy. The cases were supra-orbital neuralgia, sciatica, tabes dorsalis, acute and chronic articular rheumatism, and so-called gonorrhœal rheumatism. The neuralgic and tabetic patients took the remedy without result, excepting one who suffered from sciatica, who was relieved of pain. The acute and the gonorrhœal rheumatics were not benefited. The chronic rheumatics showed a slight improvement, but hardly more than could have been expected from fourteen days' remaining in bed. The majority of patients complained of headache, particularly in the evening, and feeling of pressure in head. Other symptoms were: insomnia, vomiting, diarrhœa, *ardor urinæ*, feeling of heat, increased thirst, and the patient with gonorrhœal rheumatism experienced increased pain. It does not seem likely that agathin will be chosen as an anti-neuralgic and anti-rheumatic.—*Deutsche med. Wochenschrift*, 1893, No. 5, S. 119.

MEDICINE.

UNDER THE CHARGE OF

W. PASTEUR, M.D. LOND., F.R.C.P.,
ASSISTANT PHYSICIAN TO THE MIDDLESEX HOSPITAL; PHYSICIAN TO THE NORTHEASTERN HOSPITAL FOR CHILDREN;

AND

SOLOMON SOLIS-COHEN, A.M., M.D.,
PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS IN THE PHILADELPHIA POLYCLINIC; PHYSICIAN TO THE PHILADELPHIA HOSPITAL.

THE BLOOD IN CASES OF PHOSPHORUS-POISONING.

V. JAKSCH (*Deutsche med. Wochenschrift*, 1893, No. 1, p. 10) reports two cases of phosphorus-poisoning, in both of which the number of red blood-corpuscles was increased; in one the number of colorless corpuscles remained normal; in the other, which was complicated by an inflammatory condition, the number was increased. It was further found that the proportion of albumin in the circulating blood was normal in both cases; neither were changes demonstrable in the morphological elements of the blood. The specific gravity of the blood was normal, but the alkalinity was considerably diminished.

HEPATIC CIRRHOSIS IN A BOY OF NINE.

BROWN (*Archives of Pædiatrics*, x. 1, p. 48) has reported the case of a boy, nine years and nine months old, of healthy German parentage, who was seized with pain in the head, back, and abdomen; tympanites, epistaxis, and irregular elevation of temperature. Considerable improvement took place; but a short time later face, legs, and abdomen became swollen, and subsequently slight jaundice appeared for a few days. The urine was high-colored and passed in small amount, but was not albuminous. The bowels were constipated. Cathartics and diuretics gave rise to copious stools and increased diuresis and vomiting, but the ascites became so threatening as to necessitate thoracentesis, which had to be repeated several times, consider-